



## **DEPARTMENT OF TRANSPORTATION**

### **Federal Aviation Administration**

#### **14 CFR Part 39**

**[Docket No. FAA-2020-1038; Project Identifier MCAI-2020-00569-E; Amendment 39-21496; AD 2021-08-02]**

**RIN 2120-AA64**

#### **Airworthiness Directives; Safran Helicopter Engines, S.A. (Type Certificate Previously Held by Turbomeca, S.A.) Turboshaft Engines**

**AGENCY:** Federal Aviation Administration (FAA), DOT.

**ACTION:** Final rule.

**SUMMARY:** The FAA is adopting a new airworthiness directive (AD) for all Safran Helicopter Engines, S.A. (Safran) Arriel 2D and Arriel 2E model turboshift engines. This AD was prompted by the manufacturer revising the maintenance and overhaul manuals to introduce new or more restrictive airworthiness limitations and maintenance tasks. This AD requires the replacement of certain critical parts before reaching their published in-service life limits, performing scheduled maintenance tasks before reaching their published periodicity, and performing unscheduled maintenance tasks when the engine meets certain conditions. As a terminating action, this AD requires operators to revise the airworthiness limitation section (ALS) of their existing approved aircraft maintenance program (AMP) by incorporating the revised airworthiness limitations and maintenance tasks. The FAA is issuing this AD to address the unsafe condition on these products.

**DATES:** This AD is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

The Director of the Federal Register approved the incorporation by reference of certain publications listed in this AD as of [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

**ADDRESSES:** For service information identified in this final rule, contact Safran Helicopter Engines, S.A., 64511 Bordes - Cedex, France; phone: (33) 05 59 74 40 00; fax: (33) 05 59 74 45 15. You may view this service information at the FAA,

Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759. It is also available at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1038.

### **Examining the AD Docket**

You may examine the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1038; or in person at Docket Operations between 9 a.m. and 5 p.m., Monday through Friday, except Federal holidays. The AD docket contains this final rule, the mandatory continuing airworthiness information (MCAI), any comments received, and other information. The address for Docket Operations is U.S. Department of Transportation, Docket Operations, M-30, West Building Ground Floor, Room W12-140, 1200 New Jersey Avenue SE, Washington, DC 20590.

**FOR FURTHER INFORMATION CONTACT:** Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7134; fax: (781) 238-7199; email: [wego.wang@faa.gov](mailto:wego.wang@faa.gov).

### **SUPPLEMENTARY INFORMATION:**

#### **Background**

The FAA issued a notice of proposed rulemaking (NPRM) to amend 14 CFR part 39 by adding an AD that would apply to all Safran Arriel 2D and Arriel 2E model turboshaft engines. The NPRM published in the *Federal Register* on November 30, 2020 (85 FR 76492). The NPRM was prompted by the manufacturer revising the maintenance and overhaul manuals to introduce new or more restrictive airworthiness limitations and maintenance tasks. In the NPRM, the FAA proposed to require the replacement of certain critical parts before reaching their published in-service life limits, performing scheduled maintenance tasks before reaching their published periodicity, and performing unscheduled maintenance tasks when the engine meets certain conditions specified in the applicable Safran Arriel maintenance manual (MM) chapter. As a terminating action, the NPRM proposed to require operators to revise the ALS of their existing approved AMP by incorporating the revised airworthiness limitations and maintenance tasks. The FAA is issuing this AD to address the unsafe condition on these products.

The European Union Aviation Safety Agency (EASA), which is the Technical Agent for the Member States of the European Community, has issued EASA AD 2018-0273, dated December 13, 2018 (referred to after this as “the MCAI”), to address the unsafe condition on these products. The MCAI states:

The airworthiness limitations and maintenance tasks for the SAFRAN ARRIEL 2D, ARRIEL 2E and ARRIEL 2N engines, which are approved by EASA, are currently defined and published in the SAFRAN ARRIEL 2 Maintenance and Overhaul Manuals, as applicable. These instructions have been identified as mandatory for continued airworthiness.

Failure to accomplish these instructions could result in an unsafe condition.

SAFRAN recently revised the applicable Maintenance and Overhaul Manuals (the applicable ALS), introducing new and/or more restrictive airworthiness limitations and maintenance tasks.

For the reason described above, this [EASA] AD requires accomplishment of the actions specified in the applicable ALS.

You may obtain further information by examining the MCAI in the AD docket at <https://www.regulations.gov> by searching for and locating Docket No. FAA-2020-1038.

## **Discussion of Final Airworthiness Directive**

### **Comments**

The FAA received no comments on the NPRM or on the determination of the costs.

### **Conclusion**

The FAA reviewed the relevant data and determined that air safety requires adopting this AD as proposed. Accordingly, the FAA is issuing this AD to address the unsafe condition on these products. Except for minor editorial changes, this AD is adopted as proposed in the NPRM.

## **Related Service Information under 1 CFR Part 51**

The FAA reviewed Section 05-10-00, Airworthiness Limitations, of Chapter 05, Airworthiness Limitations – Frequencies – Inspections, of the Safran Helicopter Engines ARRIEL 2D Maintenance Manual, Volume 1, No. X 292 R1 450 2, Update No. 20, dated June 15, 2020. Safran Helicopter Engines ARRIEL 2D Maintenance Manual No. X292 R1 450 2 identifies the terms used in tables for limits and mandatory maintenance tasks, usage counters of the engine log book, life limits for life-limited parts, and mandatory inspection tasks to be carried out to reach the airworthiness objectives on Safran Arriel 2D model engines.

The FAA reviewed Section 05-10-00, Airworthiness Limitations, of Chapter 05, Airworthiness Limitations – Frequencies – Inspections, of the Safran Helicopter Engines ARRIEL 2E Maintenance Manual No. X 292 R2 300 2, Update No. 16, dated June 15, 2020. Safran Helicopter Engines ARRIEL 2E Maintenance Manual No. X292 R2 300 2 identifies the terms used in tables for limits and mandatory maintenance tasks, usage counters of the engine log book, life limits for life-limited parts, and mandatory inspection tasks to be carried out to reach the airworthiness objectives on Safran Arriel 2E model engines.

This service information is reasonably available because the interested parties have access to it through their normal course of business or by the means identified in ADDRESSES.

### **Costs of Compliance**

The FAA estimates that this AD affects 426 engines installed on helicopters of U.S. registry.

The FAA estimates the following costs to comply with this AD:

#### **Estimated costs**

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per product</b>	<b>Cost on U.S. operators</b>
Remove and replace critical parts	12 work-hours x \$85 per hour = \$1,020	\$1,152	\$2,172	\$925,272
Perform maintenance	1 work-hour x \$85 per hour =	\$1,152	\$1,237	\$526,962

tasks	\$85			
Revise the ALS and AMP	1 work-hour x \$85 per hour = \$85	\$0	\$85	\$36,210

The FAA estimates the following costs to do any necessary corrective actions that would be required based on the results of the mandated maintenance tasks. The agency has no way of determining the number of aircraft that might need these actions.

#### **On-condition costs**

<b>Action</b>	<b>Labor Cost</b>	<b>Parts Cost</b>	<b>Cost per product</b>
Perform corrective action	1 work-hour x \$85 per hour = \$85	\$0	\$85

#### **Authority for this Rulemaking**

Title 49 of the United States Code specifies the FAA's authority to issue rules on aviation safety. Subtitle I, section 106, describes the authority of the FAA Administrator. Subtitle VII: Aviation Programs, describes in more detail the scope of the Agency's authority.

The FAA is issuing this rulemaking under the authority described in Subtitle VII, Part A, Subpart III, Section 44701: General requirements. Under that section, Congress charges the FAA with promoting safe flight of civil aircraft in air commerce by prescribing regulations for practices, methods, and procedures the Administrator finds necessary for safety in air commerce. This regulation is within the scope of that authority because it addresses an unsafe condition that is likely to exist or develop on products identified in this rulemaking action.

#### **Regulatory Findings**

This AD will not have federalism implications under Executive Order 13132. This AD will not have a substantial direct effect on the States, on the relationship between the national government and the States, or on the distribution of power and responsibilities among the various levels of government.

For the reasons discussed above, I certify that this AD:

- (1) Is not a "significant regulatory action" under Executive Order 12866,
- (2) Will not affect intrastate aviation in Alaska, and

(3) Will not have a significant economic impact, positive or negative, on a substantial number of small entities under the criteria of the Regulatory Flexibility Act.

#### **List of Subjects in 14 CFR Part 39**

Air transportation, Aircraft, Aviation safety, Incorporation by reference, Safety.

#### **The Amendment**

Accordingly, under the authority delegated to me by the Administrator, the FAA amends 14 CFR part 39 as follows:

#### **PART 39 - AIRWORTHINESS DIRECTIVES**

1. The authority citation for part 39 continues to read as follows:

Authority: 49 U.S.C. 106(g), 40113, 44701.

#### **§ 39.13 [Amended]**

2. The FAA amends § 39.13 by adding the following new airworthiness directive:

**2021-08-02 Safran Helicopter Engines, S.A. (Type Certificate previously held by Turbomeca, S.A.):** Amendment 39-21496; Docket No. FAA-2020-1038; Project Identifier MCAI-2020-00569-E.

#### **(a) Effective Date**

This airworthiness directive (AD) is effective [INSERT DATE 35 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER].

#### **(b) Affected ADs**

None.

#### **(c) Applicability**

This AD applies to all Safran Helicopter Engines, S.A. (Safran) (Type Certificate previously held by Turbomeca, S.A.) Arriel 2D and Arriel 2E model turboshaft engines.

#### **(d) Subject**

Joint Aircraft System Component (JASC) Code 7250, Turbine Section.

#### **(e) Unsafe Condition**

This AD was prompted by the manufacturer revising the maintenance and overhaul manuals to introduce new or more restrictive airworthiness limitations and maintenance tasks. The FAA is issuing this AD to prevent failure of the engine. The

unsafe condition, if not addressed, could result in uncontained release of a critical part, damage to the engine, and damage to the helicopter.

**(f) Compliance**

Comply with this AD within the compliance times specified, unless already done.

**(g) Required Actions**

(1) Replace each critical part before reaching the in-service life limits specified in paragraph 1.C., “Table of authorized in-service life limits for the ARRIEL 2D,” or “Table of authorized in-service life limits for the ARRIEL 2E,” Chapter 05-10-00 of the Safran ARRIEL Maintenance Manual (MM) for that engine.

(2) Before reaching the periodicity specified in paragraph 1., “Tables of Mandatory Maintenance Tasks,” table D., “Scheduled inspection,” Chapter 05-10-00 of the Safran ARRIEL MM for that engine, perform all maintenance tasks specified in table D.

(3) When the engine meets the conditions specified in paragraph 1., “Tables of Mandatory Maintenance Tasks,” table E., “Unscheduled inspection,” Chapter 05-10-00 of the Safran ARRIEL MM for that engine, perform the maintenance tasks specified in table E.

(4) If, during performance of the maintenance tasks required by paragraph (g)(2) or (3) of this AD, a discrepancy is found, as defined in the applicable airworthiness limitation section (ALS), perform the corrective actions specified in paragraph 1., “Tables of Mandatory Maintenance Tasks,” table D., “Scheduled inspection,” or table E., “Unscheduled inspection,” Chapter 05-10-00 of the Safran ARRIEL MM for the engine.

(5) If no compliance time is identified in Chapter 05-10-00 of the Safran ARRIEL MM, perform the corrective action before further flight.

**(h) Exception to Paragraphs (g)(2) and (3)**

Where the applicable Safran ARRIEL MM chapters provide instructions to send the Module 03 to a Safran Helicopter Engines-approved repair center, the operator may choose to send the Module 03 to any FAA-approved repair center capable of performing the required actions.

### **(i) Mandatory Terminating Action**

As terminating action to the requirements in paragraph (g) of this AD, within 365 days after the effective date of this AD, revise the ALS of the existing approved aircraft maintenance program (AMP) by incorporating:

(i) Task 05-10-00-150-801-A01, “Airworthiness Limitations – General,” from the applicable Safran ARRIEL MM chapter.

(ii) Task 05-10-00-200-801-A01, “Airworthiness Limitations – Authorized In-Service Life Limits,” from the applicable Safran ARRIEL MM chapter.

(iii) Task 05-10-10-200-801-A01, “Airworthiness Limitations – Tables of Mandatory Maintenance Tasks,” from the applicable Safran ARRIEL MM chapter.

### **(j) Definitions**

(1) For the purpose of this AD, a “critical part” is a part identified in paragraph 1.C., “Table of authorized in-service life limits for the ARRIEL 2D,” or “Table of authorized in-service life limits for the ARRIEL 2E,” Chapter 05-10-00 of the Safran ARRIEL MM for that engine.

(2) For the purpose of this AD, the “Chapter 05-10-00 of the Safran ARRIEL MM” is:

(i) Chapter 05-10-00 of Safran Aircraft Engines ARRIEL 2D MM No. X292 R1 450 2, Update No. 20, dated June 15, 2020; or

(ii) Chapter 05-10-00 of Safran Aircraft Engines ARRIEL 2E MM No. X292 R2 300 2, Update No. 16, dated June 15, 2020.

(3) For the purpose of this AD, the “approved maintenance program” is defined as the basis for which the operator ensures the continuing airworthiness of each operated helicopter.

### **(k) Credit for Previous Actions**

(1) For affected Safran Arriel 2D model turboshaft engines, you may take credit for revising the ALS of the existing approved AMP that is required by paragraph (i) of this AD if you incorporated the tasks before the effective date of this AD using Chapter 05-10-00 of Safran ARRIEL 2D MM No. X292 R1 450 2, Update No. 19, dated December 30, 2019.



(2) For affected Safran Arriel 2E model turboshaft engines, you may take credit for revising the ALS of the existing approved AMP that is required by paragraph (i) of this AD if you incorporated the tasks before the effective date of this AD using Chapter 05-10-00 of Safran ARRIEL 2E MM No. X292 R2 300 2, Update No. 15, dated December 30, 2019.

**(l) Alternative Methods of Compliance (AMOCs)**

(1) The Manager, ECO Branch, FAA, has the authority to approve AMOCs for this AD, if requested using the procedures found in 14 CFR 39.19. In accordance with 14 CFR 39.19, send your request to your principal inspector or local Flight Standards District Office, as appropriate. If sending information directly to the manager of the certification office, send it to the attention of the person identified in Related Information. You may email your request to: ANE-AD-AMOC@faa.gov.

(2) Before using any approved AMOC, notify your appropriate principal inspector, or lacking a principal inspector, the manager of the local flight standards district office/certificate holding district office.

**(m) Related Information**

(1) For more information about this AD, contact Wego Wang, Aviation Safety Engineer, ECO Branch, FAA, 1200 District Avenue, Burlington, MA 01803; phone: (781) 238-7134; fax: (781) 238-7199; email: wego.wang@faa.gov.

(2) Refer to European Union Aviation Safety Agency (EASA) AD 2018-0273, dated December 13, 2018, for more information. You may examine the EASA AD in the AD docket at <https://www.regulations.gov> by searching for and locating it in Docket No. FAA-2020-1038.

**(n) Material Incorporated by Reference**

(1) The Director of the Federal Register approved the incorporation by reference (IBR) of the service information listed in this paragraph under 5 U.S.C. 552(a) and 1 CFR part 51.

(2) You must use this service information as applicable to do the actions required by this AD, unless the AD specifies otherwise.

(i) Section 05-10-00, Airworthiness Limitations, of Chapter 05, Airworthiness Limitations – Frequencies – Inspections, of the Safran Helicopter Engines ARRIEL 2D Maintenance Manual, Volume 1, No. X 292 R1 450 2, Update No. 20, dated June 15, 2020.

(ii) Section 05-10-00, Airworthiness Limitations, of Chapter 05, Airworthiness Limitations – Frequencies – Inspections, of the Safran Helicopter Engines ARRIEL 2E Maintenance Manual, Volume 1, No. X 292 R2 300 2, Update No. 16, dated June 15, 2020.

(3) For service information identified in this AD, contact Safran Helicopter Engines, S.A., 64511 Bordes - Cedex, France; phone: (33) 05 59 74 40 00; fax: (33) 05 59 74 45 15.

(4) You may view this service information at FAA, Airworthiness Products Section, Operational Safety Branch, 1200 District Avenue, Burlington, MA 01803. For information on the availability of this material at the FAA, call (781) 238-7759.

(5) You may view this service information that is incorporated by reference at the National Archives and Records Administration (NARA). For information on the availability of this material at NARA, email: [fedreg.legal@nara.gov](mailto:fedreg.legal@nara.gov), or go to: <https://www.archives.gov/federal-register/cfr/ibr-locations.html>.

Issued on May 11, 2021.

Lance T. Gant, Director,  
Compliance & Airworthiness Division,  
Aircraft Certification Service.

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